

## **AMENDMENTS TO THE SPECIFICATION:**

Please amend the specification as follows:

Title: PROCESS FOR PRODUCING LASER ENGRAVABLE PRINTING  
SUBSTRATE CAPABLE OF LASER SCULPTURE

Page 10, replace the paragraphs beginning on line 27 through Page 14, line 4 with the following amended paragraphs:

The present invention is as follows:

1. A process for producing a laser engravable printing substrate, comprising the steps of: forming a photosensitive resin composition layer on a cylindrical support or a sheeted support; and applying light to the formed photosensitive resin composition layer to form a cured photosensitive resin layer, ~~having a thickness of 50  $\mu\text{m}$  or more and 50 mm or less~~ and then adjusting a thickness of the cured photosensitive resin layer and shaping a surface of the cured photosensitive resin layer, wherein the light applied to the photosensitive resin composition layer includes light having a wavelength of 200 nm or more and 450 nm or less, and an illuminance of light at a surface of the photosensitive resin composition layer is 20 mW/cm<sup>2</sup> or more ~~and 2 W/cm<sup>2</sup> or less~~ when measured using a UV meter (trade mark "UV-M02" manufactured by ORC Manufacturing Co., Ltd.) and a filter (trade mark "UV-35-APR Filter" manufactured by ORC Manufacturing Co., Ltd.), and 3 mW/cm<sup>2</sup> or more ~~and 2 W/cm<sup>2</sup> or less~~ when measured using the above described UV meter and a filter (trade mark "(UV-25 Filter" manufactured by ORC Manufacturing Co., Ltd.).
2. The process set forth in item 1, wherein the illuminance of light at a surface of the photosensitive resin composition layer is 20 mW/cm<sup>2</sup> or more and 2 W/cm<sup>2</sup> or less when

measured using a UV meter (trade mark "UV-M02" manufactured by ORC Manufacturing Co., Ltd.) and a filter (trade mark "UV-35-APR Filter" manufactured by ORC Manufacturing Co., Ltd.), and 3 mW/cm<sup>2</sup> or more and 2 W/cm<sup>2</sup> or less when measured using the UV meter and a filter (trade mark "UV-25 filter" manufactured by ORC Manufacturing Co., Ltd.).

3. The process set forth in item 2, wherein said cured photosensitive resin layer has a thickness of 50 μm or more and 50 mm or less.

~~2. The process set forth in item 1, further comprising a step of adjusting a thickness of the cured photosensitive resin layer and shaping a surface of the cured photosensitive resin layer after the step of applying light to the above described photosensitive resin composition layer to form the cured photosensitive resin layer.~~

~~[[3]]4. The process set forth in [[item]] any one of items 1 to 3, further comprising a step of applying light to the cured photosensitive resin layer again after the step of adjusting the thickness of the above described cured photosensitive resin layer and shaping the surface of the cured photosensitive resin layer, wherein the light applied to the cured photosensitive resin layer again includes light having a wavelength of 200 nm or more and 450 nm or less, and the illuminance of light at the surface of the cured photosensitive resin layer is 20 mW/cm<sup>2</sup> or more and 2 W/cm<sup>2</sup> or less when measured using a UV meter (trade mark "UV-M02" manufactured by ORC Manufacturing Co., Ltd.) and a filter (trade mark "UV-35-APR Filter" manufactured by ORC Manufacturing Co., Ltd.), and 3 mW/cm<sup>2</sup> or more and 2 W/cm<sup>2</sup> or less when measured using the above described UV meter and a filter (trade mark "UV-25 Filter" manufactured by ORC Manufacturing Co., Ltd.).~~

- [[4]]5. The process for producing a laser engravable printing substrate set forth in [[item]] any one of items 1 to 3, wherein the light is applied to the above described photosensitive resin composition layer or cured photosensitive resin layer in the air.
- [[5]]6. The process set forth in [[item]] any one of items 1 to 3, wherein the temperature of the above described photosensitive resin composition layer or the above described cured photosensitive resin layer is -50°C or more and 150°C or less.
- [[6]]7. The process set forth in [[item]] any one of items 1 to 3, wherein the above described photosensitive resin composition layer is liquid at 20°C.
- [[7]]8. The process set forth in [[item]] any one of items 1 to 3, wherein the above described photosensitive resin composition layer is solid at 20°C.
- [[8]]9. The process set forth in [[item]] any one of items 1 to 3, wherein the above described cured photosensitive resin layer is a seamless layer.
- [[9]]10. The process set forth in [[item]] any one of items 1 to 3, wherein an optical system for collecting light exists between a light source for applying light and the above described photosensitive resin composition layer.
- [[10]]11. The process set forth in any one of items 1 to [[7]]3, wherein the printing substrate is a flexographic printing original plate on which a concavo-convex pattern can be formed by applying laser light, a letter press printing original plate, a gravure printing original plate, a screen printing original plate on which a perforated pattern can be formed by applying laser light, or a blanket for offset printing.
- [[11]]12. A printing substrate capable of laser engraving, characterized in that in measurement of dynamic viscoelasticity of a cured photosensitive resin light using a non-resonant force stretch vibration apparatus, a loss tangent ( $\tan \delta$ ) defined by a ratio

of a loss elastic modulus ( $E''$ ) to a storage elastic modulus ( $E'$ ) has a peak in a measurement temperature range of  $-100^{\circ}\text{C}$  or more and  $20^{\circ}\text{C}$  or less, and when  $\tan \delta$  has a peak in a temperature range of  $-50^{\circ}\text{C}$  or more and  $20^{\circ}\text{C}$  or less, the value of  $\tan \delta$  at the peak temperature is 0.87 or more and 1.5 or less, and when  $\tan \delta$  has a peak in a temperature range of  $-100^{\circ}\text{C}$  or more and less than  $-50^{\circ}\text{C}$ , the value of  $\tan \delta$  at the peak temperature is 0.7 or more and to 1.5 or less.

Page 15, replace the paragraph beginning on line 19 with the following amended paragraph:

A process for producing a cured photosensitive resin according to the present invention comprises the steps of: forming a photosensitive resin composition layer on the cylindrical support or a sheeted support; and applying light to the formed photosensitive resin layer to form a cured photosensitive resin layer capable of laser engraving. Further, the process is characterized in that the light applied to the photosensitive resin layer includes light having a wavelength of 200 nm or more and 450 nm or less, and the illuminance of light at the surface of the photosensitive resin layer is  $20 \text{ mW/cm}^2$  or more,  $20 \text{ mW/cm}^2$  or more and  $2 \text{ W/cm}^2$  or less, more preferably  $50 \text{ mW/cm}^2$  or more and  $1 \text{ W/cm}^2$  or less, further preferably  $80 \text{ mW/cm}^2$  or more and  $1 \text{ W/cm}^2$  or less, most preferably  $80 \text{ mW/cm}^2$  or more and  $500 \text{ mW/cm}^2$  or less when measured using a UV meter (trade mark "UV-M02" manufactured by ORC Manufacturing Co., Ltd.) and a filter (trade mark "UV-35-APR Filter" manufactured by ORC Manufacturing Co., Ltd.), and  $3 \text{ mW/cm}^2$  or more, preferably  $3 \text{ mW/cm}^2$  or more and  $2 \text{ W/cm}^2$  or less, more preferably  $5 \text{ mW/cm}^2$  or more and  $1 \text{ W/cm}^2$  or less, further preferably  $10 \text{ mW/cm}^2$  or more and  $1 \text{ W/cm}^2$  or less, most preferably  $10 \text{ mW/cm}^2$  or

more and  $100 \text{ mW/cm}^2$  or less when measured using the above described UV meter and a filter (trade mark "UV-25 Filter" manufactured by ORC Manufacturing Co., Ltd.). If the illuminance is within the range described above, the effect of reducing the hardness of the cured photosensitive resin is sufficient, and decomposition or evaporation of components in the photosensitive resin composition during application of light can be avoided. If the illuminance is above the range described above, the effect of reducing the hardness of the photo-cured resin tends to approach a constant value.